



## How to improve interdisciplinary and innovation competences among bachelor of engineering students

Løje, Hanne

*Publication date:*  
2018

*Document Version*  
Publisher's PDF, also known as Version of record

[Link back to DTU Orbit](#)

*Citation (APA):*  
Løje, H. (2018). *How to improve interdisciplinary and innovation competences among bachelor of engineering students*. 24. Abstract from 4th conference on interdisciplinary teamwork skills for the 21st century, Trondheim, Norway.

---

### General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

## **HOW TO IMPROVE INTERDISCIPLINARY AND INNOVATION COMPETENCES AMONG BACHELOR OF ENGINEERING STUDENTS**

**Hanne Løje**

Technical University of Denmark

Ballerup, Denmark

E-mail: [halo@dtu.dk](mailto:halo@dtu.dk)

Oral presentation: longer presentation (20 minutes) (but a short presentation will also be fine)

From society and industry, there are increasing demands for skilled and well-educated engineers who can develop new solutions through innovation and interdisciplinary teams that solve problems are necessary for creating successful innovation.

Therefore, a central question is how to enhance interdisciplinary competences of engineering students in order to educate future engineers that can work in interdisciplinary teams and be able to develop new solutions through innovation. Consequently, many universities have recently developed interdisciplinary courses in the field of innovation. An interdisciplinary course will typically bring students together from different study programs and often it includes working with external companies to solve challenges provided by the companies. By engaging students from different study programs and place them into an interdisciplinary learning environment the idea is that they will make use of different viewpoints and difference competences in order to solve case problems for involved companies.

The scope of this study is to address the question “How to enhance the innovation and interdisciplinary competences of engineering students?” We will present a new mandatory course for Bachelor of Engineering students at the Technical University of Denmark (DTU) called Innovation Pilot. The outline for the course is that the students work in interdisciplinary teams to solve specific real-life challenges offered by external companies. The teaching is based on a combination of e-learning, workshops and company collaboration.

The Innovation Pilot course is a 10 ECTS compulsory course in innovation and interdisciplinary and it is offered three times per year, twice in the semester periods of 13 weeks and as an intensive summer course of 6 weeks. At DTU there are 17 study programs involved, approximately 450 students from these study programs attend the course during each spring and fall semester and approximately 100 students attend the summer course. At the beginning of the course, the students are divided into smaller units of up to 60 students running at the same time in parallel. In each unit, teams are formed consisting of 5-6 students with a minimum of two disciplines present in each team.

Preliminary results from a survey regarding the students’ innovation and interdisciplinary competences show that the course has succeed in creation an understanding of what innovation is. However interdisciplinary is still difficult for the students to handle. In the presentation, more details about our experiences with teaching interdisciplinary student teams within the field of innovation will be present.